REMARKS

The Examiner, Mr. Kackar, is thanked for the courtesy extended applicants attorney during the interview of August 23, 2005 during which time differences between the claimed invention and the cited art were discussed.

By the present amendment, independent claims 8 and 9 have been amended to clarify features of the present invention which are recited or were intended to be recited in independent claims 8 and 9 such that it is apparent that the amendment of claims 8 and 9 do not raise new issues requiring further search and/or consideration. More particularly, claims 8 and 9 have been amended to more clearly set forth that the step of determining and the step of comparing include three separate substeps which are different from one another and each of which must be given proper consideration. Thus, both claims 8 and 9 have been amended to now recite "a step (a) of determining an average value of the differences in one batch, (b) of determining a difference between a maximum and a minimum of the differences in one batch, and (c) of determining a standard deviation of the differences in one batch". Likewise, the step of comparing has been amended to clarify that three substeps are included therein which are different from one another and the claims recite "a step (a) of comparing the average value of the differences in one batch, (b) of comparing the difference between the maximum and the minimum of the difference in one batch, and (c) of comparing the standard deviation of the differences in one batch with a preset threshold", it being noted, that in the prior amendment of claim 9, inadvertently, the comparison "with a preset threshold" was inadvertently deleted. Thus, it is apparent that the amendments are merely of a clarifying nature and do not raise any new issues requiring further search and/or consideration. Further, it is apparent that claims 8 and 9 recite the features in a step

plus function format as sanctioned by the sixth paragraph of 35 USC 112 and must be given proper consideration.

It is noted that during the discussions with the Examiner, the Examiner suggested that possibly if the obtained output signals were indicated as being "principle component scores", favorable consideration might be given. In light thereof, applicants have presented dependent claims setting forth such features, although it is not apparent whether the Examiner would consider such features to represent allowable features. However, it is apparent that the Examiner has given consideration to such features. Accordingly, applicants request consideration of such features at this time.

With regard to the newly added dependent claims 10 - 21, setting forth these features as dependent claims upon independent claims 8 and 9, respectively, applicants note that as described with respect to step (S23) in Fig. 2, for example, as indicated in the third paragraph at page 25 of the specification, a principle component analysis is performed on the significant part of the plasma emission data to calculate the output signal z (Step S23), and a first principle component score obtained by the principle component analysis constitutes the output signal z. Thereafter, in step S26 as shown in Fig. 2 and at pages 27 and 28 of the specification there is described the calculation of the average value of the differences in one lot, calculation of the difference between the maximum and minimum of the different in one lot, and calculation of the standard deviation of the difference in one lot, which obtained values are compared with a threshold value for each type of value obtained in the manner as illustrated in Figs. 7(a), 7(b) and 7(c), respectively, for example. Furthermore, while Fig. 7 is directed to the comparison for the first principle component, Fig. 8 illustrates the comparison for the second

principle component, and Fig. 9 illustrates the comparison for the third principle component. The newly presented dependent claims 10 - 21 recite the aforementioned features.

Turning to the rejection of claim 8 under 35 USC 103(a) as being unpatentable over Lam et al (US 6,825,920) and the rejection of claim 9 under 35 USC 103(a) as being unpatentable over Lam et al (US 6,825,920) in view of Admitted Prior Art (Fig. 13, 14 and pages 1 - 11), and Kaji et al (US 6,716,300 B2), such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

With regard to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be

remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

In setting forth the rejection based upon Lam et al, the Examiner indicates that "Lam et al disclose determination of differences from substrate to substrate (Col. 11, lines 1 - 10) and compare it with the threshold (Fig. 13 - 790 and Col. 2, lines 26 - 37) and teach that the differences could be from the output of substrate run to PCA model (Principle Component analysis - multivariate analysis) and undergo statistical analysis like standard deviation (col. 9, lines 1 - 12)." The Examiner further states that:

> Lam et al do not disclose average and difference of Maximum and Minimum difference.
>
> However, since determination of average and difference of maximum and minimum is essential for finding variance and therefore a measure of the process condition (seasoning) it is obvious to determine that in addition to standard deviation as discloses by Lam et al. (emphasis added)

Turning to the disclosure of Lam et al, column 9, lines 1 - 12, referred to by the Examiner, merely indicate that using principle components, each spectrum

ascertained from a measured run can be projected thereon to determine a "measured" score and from the measured scores and model scores, a distance from the model can be computed. Additionally, a parameter can be output which is a combined measure of the residual standard deviation of the sample and score distances (distance of the new score(s) to the normal score range of that model, if the score(s) is outside that range. It is not apparent what Lam considers to be the "residual standard deviation of the sample", noting that a definition for "standard deviation" is the "positive square root of the expected value of the square of the difference between a random variable and its mean". Irrespective of the Examiner's contentions as whether or not an average or a mean is obtained as well as differences with respect to such mean, in order to obtain the standard deviation as described in Lam et al, applicants submit that Lam et al provides no disclosure or teaching in the sense of 35 USC 103 of the recited steps "(a) of determining an average value of the differences in one batch", "(b) of determining a difference between a maximum and a minimum of the differences in one batch", and "(c) of determining a standard deviation of the differences in one batch", as recited in independent claims 8 and 9 of this application. That is, assuming a mean value may be considered an average value which is utilized for determination of a standard deviation, it is not apparent that such represent an average value of the differences, and that the standard deviation is a standard deviation of the differences in one batch. Moreover, utilizing the aforementioned definition for "standard deviation" it is apparent that it is not necessary to determine a difference between a maximum and a minimum of the differences in one batch, but only the variation with respect to the mean value. Thus, irrespective of the contentions by the Examiner, applicants submit that at least Lam et al provides no disclosure or teaching step "(b) of

determining a difference between a maximum and a minimum of the differences in one batch" (emphasis added). Accordingly, applicants submit that claims 8 and 9 patentably distinguish over Lam et al with respect to such feature alone.

Furthermore, each of claims 8 and 9 recite the feature "(a) of comparing the average value of differences in one batch" with a preset threshold; "(b) of comparing the difference between the maximum and the minimum of the differences in one batch" with a present threshold; and "(c) of comparing the standard deviation of the differences in one batch" with a preset threshold. Although the Examiner refers to Fig. 13-790 as shown in Fig. 13 of Lam, in step 790, as described at column 11, lines 1 - 7, either before, after or concurrently with the action of step 780, the at least one signal from the current substrate is compared with the at least one signal from at least one of the preceding substrates to form at least one difference signal in step 790, the different signal is then compared with a predetermined target signal. Irrespective whether or not a single different signal or plural different signals are obtained in accordance with Lam et al, such is obtained by comparison of a signal from a current substrate with at least one signal from at least one preceding substrate, and does not represent a determination of the three types of signals as obtained in the step of determining, and further, there is no disclosure or teaching in Lam et al of comparing each of the three different types of signals obtained with a preset threshold. As such, applicants submit that Lam et al, contrary to the position set forth by the Examiner fails to disclose or teach the claimed features of claims 8 and 9 in the sense of 35 USC 103 and such claims should be considered allowable thereover.

With respect to the other cited art, irrespective of the disclosures of such additional cited art, applicants submit that the cited art does not overcome the

deficiencies of Lam et al as pointed out above, such that claims 8 and 9 also patentably distinguish over the proposed combination as set forth by the Examiner in the sense of 35 USC 103 such that claims 8 and 9 should be considered allowable thereover.

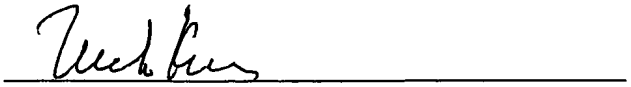
As to the newly added dependent claims, it is readily apparent that Lam et al taken alone or in combination fails to disclose or teach the determination as set forth in the step of determining with respect to principle component scores and, first, second and third principle component scores with comparison being effected in the manner set forth and recited in claims 10 - 21. Accordingly, applicants submit that these claims further patentably distinguish over the cited art and should be considered allowable with the parent claims.

In view of the above amendments and remarks, applicants submit that all claims patently distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 648.42568VX1), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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